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Quality of Care and Outcomes Assessment

MEETING ITS MATCH: NONSPECIFIC VERSUS IGG-SPECIFIC PF4 ANTIBODY TESTING IN THE MANAGEMENT OF HEPARIN-INDUCED THROMBOCYTOPENIA

ACC Moderated Poster Contributions
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Background: Nonspecific PF4 ELISA assays lack specificity in diagnosing heparin-induced thrombocytopenia (HIT). Recently an IgG specific PF4 assay became available with the potential to increase the specificity while maintaining the sensitivity of older PF4 ELISAs. The study objective was to evaluate whether an IgG specific PF4 assay would reduce the rate of laboratory diagnosed HIT. Secondary objectives were to determine if prescribing practices of direct thrombin inhibitors (DTIs) were impacted and consequently safety and economic outcomes.

Methods: We conducted a single center prospective cohort with historical control study that evaluated all adult patients admitted to Brigham and Women's Hospital that were assessed for HIT using a PF4 ELISA antibody test from March 1, 2010 to April 6, 2011. Tests run between March 1 and August 31, 2010 utilized a nonspecific PF4 ELISA and those run between September 1, 2010 and April 6, 2011 utilized an IgG specific PF4 ELISA.

Results: Six hundred and seventy two patients with either a nonspecific PF4 ELISA (n = 336) or an IgG specific PF4 ELISA (n = 336) were included in the analysis. The percent of patients with a positive PF4 antibody test was 11.31 versus 6.85 (ARR 4.46%, RRR 39.47%, p = 0.044) in the nonspecific and IgG specific cohorts respectively. There was no difference in the percent of patients with a low, intermediate or high risk of HIT based on the 4Ts pretest clinical scoring system. Fewer patients were prescribed a DTI in the IgG specific cohort [87(25.9) vs. 65(19.4); p = 0.045] with an overall reduction in DTI expenditure of $84,286.41. The nonspecific and IgG specific cohorts were similar in the duration of DTI therapy (9.0 ± 9.1 days vs. 9.2 ± 11.3 days; p = 0.89), hospital length of stay (17.9 ± 17.7 days vs. 20.6 ± 22.9 days; p = 0.089) and in-hospital mortality (23.5% vs. 25.0%; p = 0.65).

Conclusions: The use of a PF4 ELISA specific for IgG antibodies was associated with a significant reduction in the laboratory diagnosis of HIT. The prescribing practices of direct thrombin inhibitors (DTIs) were also significantly altered during this time period resulting in a decreased cost of drug therapy. Further safety and efficacy outcomes are currently under evaluation.